What is claimed is:

1. A leadframe which is intended to be equipped with a semiconductor chip (2) and to be enveloped with a polymer material (4), a polymer layer (5) being applied as an adhesive layer to the leadframe and having end groups (6) which are aligned toward the polymer material (4) and end groups (7) which are aligned toward the flat conductor (1), and the polymer layer comprising at least one polymer from the group of the fluorinated polyimides, the polyisocyanates, the polyamidocarboxylic esters of the polyamide-silicone block copolymers, the polyamide imides having silanes in the polymer chain or the polyimide-silicone copolymers having silanes in the copolymer chain.

2. The leadframe as claimed in claim 1, characterized in that the polymer layer comprises a fluorinating polyimide, and, to this end, a 10 percent by weight solution of a polyimide, composed of 2,2-bis[phenyl-3′,4′-dicarboxylic anhydride]-1,1,1,3,3,3-hexafluoropropylene and 3,3′,5,5′-tetramethyl-4-,4′-diaminodiphenylmethane in γ-butyrolactone or NMP and cyclopentanone with a γ-butyrolactone or NMP:cyclopentanone weight ratio = 1:2, is applied to the semiconductor component before the encapsulation process, selectively without spraying of the outer connecting pins and of the heatsink plate, with a suitable dispensing apparatus, in such a way that a layer thickness d where $0.05\ \mu m \le d \le 5\ \mu m$ is realized after the heat treatment process which follows.

3. The leadframe as claimed in claim 1, characterized in that

the adhesive layer comprises polyamide imide whose acid groups have been condensed with amino groups of a silane, each 2nd to 10th free acid group of the polyamide imide having reacted chemically with an amino group of a silane.

4. The leadframe as claimed in claim 1 or claim 3, characterized in that
the adhesive layer comprises a polyimide amide-silicone copolymer having silanes in the polymer chain, acid groups of the polyamide imide having been condensed with amino groups of a silane and every 2nd to 10th free acid group of the polyamide imide having reacted chemically with an amino group of a silane.

5. The leadframe as claimed in one of claims 1 to 4, characterized in that
the polymer layer (5) additionally comprises one or more of the following substances:
- imidazoles
- liquid-crystalline polymers
- high-temperature-resistant thermoplastics
- phenol resins
- amino resins
- siloxanes
- unsaturated polyesters
- polybenzoxazoles
- polybenzimidazoles
- epoxides
- polyurethanes
- polymers with sulfur in the main chain
- polymers with sulfur in the side chain.

6. The leadframe as claimed in one of claims 1 to 5, characterized in that

the polymer layer (5) has, in the main chains and/or side chains, additionally one or more of the following functional groups:

- sulfone group
- mercapto group
- amino group
- carboxyl group
- cyano group
- keto group
- hydroxyl group
- silano group
- titano group.

7. The leadframe as claimed in one of the previous claims,
characterized in that
one polymer precursor comprises one or more copolymers.

8. The leadframe as claimed in one of the previous claims,
characterized in that
one polymer precursor comprises a mixture of two or more polymers.

9. The leadframe as claimed in one of the previous claims,
characterized in that
the polymer layer (5) has one or more plies, each ply comprising one or more polymers.

10. The leadframe as claimed in one of the previous claims,
characterized in that
the polymer layer (5) comprises one or more of the following assistants:

- solvents
- adhesion promoters

- antioxidants
- catalysts
- reinforced fillers
- plasticizers
- UV stabilizers.

11. An unencapsulated semiconductor component which is provided with a polymer material (4) to envelope it, a polymer layer (5) being applied to the unencapsulated semiconductor component and having end groups (6) which are aligned toward the polymer composition (4) and end groups (7) which are aligned toward the flat conductor (1), and the polymer layer comprising at least one polymer from the group of the fluorinated polyimides, the polyisocyanates, the polyamidocarboxylic esters of the polyamide-silicone block copolymers, the polyamide imides having silanes in the polymer chain or the polyimide-silicone copolymers having silanes in the copolymer chain.

12. The unencapsulated semiconductor component as claimed in claim 11,
characterized in that
the polymer layer (5) additionally comprises one or more of the following substances:
    - imidazoles
    - liquid-crystalline polymers
    - high-temperature-resistant thermoplastics
    - phenol resins
    - amino resins
    - siloxanes
    - unsaturated polyesters
    - polybenzoxazoles
    - polybenzimidazoles
    - epoxides
    - polyurethanes
    - polymers with sulfur in the main chain

- polymers with sulfur in the side chain.

13. The unencapsulated semiconductor component as claimed in claim 11 or claim 12, characterized in that one polymer precursor comprises one or more copolymers.

14. The unencapsulated semiconductor component as claimed in one of claims 11 to 13, characterized in that one polymer precursor comprises a mixture of two or more polymers.

15. The unencapsulated semiconductor component as claimed in one of claims 11 to 14, characterized in that the polymer layer (5) has one or more plies, each ply comprising one or more polymers.

16. The unencapsulated semiconductor component as claimed in one of claims 11 to 15, characterized in that the polymer layer (5) comprises one or more of the following assistants:
    - solvents
    - adhesion promoters
    - antioxidants
    - catalysts
    - reinforced fillers
    - plasticizers
    - UV stabilizers.

17. The unencapsulated semiconductor component as claimed in one of claims 11 to 14, characterized in that

the semiconductor component has a semiconductor chip (2) and an envelope of a polymer material (4).

18. A process for producing a leadframe which is intended to be equipped with a semiconductor chip (2) and to be enveloped with a polymer material (4), comprising the following steps:
- providing a substrate 1 and/or an unencapsulated semiconductor component,
- applying a suspension or a polymer precursor to the substrate 1 and/or the unencapsulated semiconductor component,
- obtaining a polymer layer (5) by evaporating a solvent or by polymerizing the polymer precursor, the polymer layer (5) comprising at least one polymer from the group of the fluorinated polyimides, the polyisocyanates, the polyamidocarboxylic esters of the polyamide-silicone block copolymers, the polyamide imides having silanes in the polymer chain or the polyimide-silicone copolymers having silanes in the copolymer chain.

19. The process as claimed in claim 18, characterized in that a 10 percent by weight solution of a polyimide, composed of 2,2-bis[phenyl-3',4'-dicarboxylic anhydride]-1,1,1,3,3,3-hexafluoropropylene and 3,3',5,5'-tetramethyl-4,4'-diaminodiphenylmethane in γ-butyrolactone (or NMP) and cyclopentanone in a γ-butyrolactone (or NMP):cyclopentanone weight ratio = 1:2, is applied selectively to the semiconductor component before the encapsulation process,
in that the component thus coated is then heated from room temperature to 200°C in a nitrogen-purged oven using a temperature ramp (2-5°C/min),

and in that the component is then cooled at 200°C for 60 minutes with evaporation of the solvent from the coating solution and enveloped with an encapsulating material composed of epoxy resin.

20. The process as claimed in claim 18, characterized in that a 20 percent by weight solution of polyamide imide (PAI) is admixed with from 0.1 to 1 percent by weight of 3-aminopropyltrimethoxysilane in dimethylacetamide, NMP or γ-butyrolactone, and stirred at 80°C for 2 hours, so that the amino groups of the silane condense with the acid groups of the PAI in such a way that, depending on the amount of silane added, approx. every 2nd to 10th free acid group of the PAI reacts chemically with an amino group of a silane, in that the solution thus obtained is then diluted in any desired manner with cyclopentanone, anisole, acetone or similar solvents to a concentration of approx. 5 percent by weight (based on the silane-modified PAI), in that this solution is applied selectively to the semiconductor component before the encapsulation process, in that the component thus coated is heated from room temperature to 200°C in a nitrogen-purged oven using a temperature ramp (2-5°C/min) and is kept at 200°C for 60 minutes with evaporation of the solvent, and in that the component is finally enveloped with an encapsulating material composed of epoxy resin.

21. The process as claimed in claim 18 or claim 20, characterized in that a polyimide-silicone copolymer having silanes in the polymer chain is obtained by selectively applying a polymer prepared with silanes and

composed of silicone and polyamide imide as an approx. 5 percent by weight solution in NMP, cyclopentanone and acetone in a mass ratio of the solvents: NMP:cyclopentanone:acetone = approx. 1:2:2 to the semiconductor component before the encapsulation process, and

in that a heat treatment process is carried out in which the component thus coated is heated from room temperature to 200°C in a nitrogen-purged oven using a temperature ramp (2-5°C/min) and is kept at 200°C for 60 minutes with evaporation of the solvent, and

in that, after the component has been cooled to about room temperature, the component is enveloped with the encapsulating material composed of epoxy resin.

22. The process as claimed in claim 18, characterized in that

a polyamidocarboxylic acid dissolved in from approx. 50 to approx. 90% by weight of N-methylpyrrolidone (NMP) and esterified with diethylene glycol methacrylate (polycondensed from the monomers pyromellitic anhydride and 4,4'-oxydianiline) is diluted with cyclopentanone in a ratio of approx. 1:20,

in that this solution is mixed further with acetone or ethanol in a ratio of approx. 1:1,

in that as a still unencapsulated semiconductor component is immersed into this solution for contacting of the semiconductor chip and its wires at an immersion rate of from approx. 0.5 to approx. 5 cm per second and pulled out again,

in that the semiconductor component thus coated is subsequently stored in a magazine at about room temperature for from approx. 5 to approx. 500 minutes,

in that this unencapsulated semiconductor component is then positioned for from approx. 15 to approx. 60 minutes in a forced-air oven under a flow of at least approx. 20 l/min of nitrogen with a set temperature of from approx. 80 to approx. 100°C,
in that the temperature is then increased to approx. 250°C with a heating rate of from approx. 3 to approx. 5°C/min and is kept for at least approx. 60 minutes, and
in that, after cooling (cooling rate from approx. 2 to approx. 5°C/min) of the coated semiconductor component in the oven with nitrogen purging to about room temperature, the semiconductor components thus coated are encapsulated with an epoxy resin molding material within approx. 48 hours.

23. The process as claimed in claim 18, characterized in that
a solution of a polyamidocarboxylic ester with an NMP/cyclopentanone/acetone mixture is admixed with approx. 10% (based on the weight of pure polyamidocarboxylic ester) of N-(3-(trimethoxysilyl)propyl)ethylenediamine and stirred at approx. 120°C for approx. one hour,
in that, in the course of this, the silane is polycondensed with another silane to give the silicone and, simultaneously with its amino group, partly with the acid groups of the polyamidocarboxylic acid to give the polyamide-silicone block copolymer, and secondly, with its amino group, partly with the acid groups of the polyamidocarboxylic acid, once the diethylene glycol methacryloyl side chains have been eliminated, to give the silane- or silicone-modified polyimide precursor,

in that the solution thus prepared, after the contacting with the semiconductor chip and wire, is applied to the unencapsulated semiconductor component,

in that the component thus coated is then stored in a magazine at about room temperature for from approx. 5 to approx. 500 minutes,

in that this component is then positioned for from approx. 15 to approx. 60 minutes in a forced-air oven with purging with at least approx. 20 l/min of nitrogen at a set temperature of from approx. 80 to approx. 100°C,

in that the temperature is then increased to approx. 250°C at a heating rate of from approx. 3 to approx. 5°C/min and this is kept for at least approx. 60 min;

in that, after cooling (cooling rate from approx. 2 to approx. 5°C/min) of the coated semiconductor component in the oven with nitrogen purging to about room temperature, the semiconductor components thus coated are encapsulated with an epoxy resin molding material within approx. 48 hours.

24. The process as claimed in claim 18, characterized in that

the semiconductor component, immediately before the polymer encapsulation, is immersed at an immersion rate of from approx. 0.5 to approx. 2 cm per second first into a solution of from approx. 10 to approx. 30% by weight of polyisocyanate in methyl ethyl ketone and pulled out again, in the course of which the surfaces which are to be unencapsulated later are masked with a Kapton film,

in that, within approx. 30 minutes after the end of the immersion process, a solution of approx. 1% by weight of polybenzoxazole (PBO) in a mixture of

approx. 9% by weight of NMP, approx. 40% by weight, approx. 50% by weight of acetone is then applied to this polyisocyanate layer,

in that, after removal of the Kapton film, this component in the magazine is heated for from approx. 15 to approx. 60 minutes in a nitrogen-purged forced-air oven with a set temperature of from approx. 80 to approx. 100°C,

in that the temperature is then increased to approx. 200°C at a heating rate of from approx. 3 to approx. 5°C/min and is kept for at least approx. 30 minutes, and

in that, after cooling (cooling rate from approx. 2 to approx. 5°C/min) of the coated semiconductor component in the oven with nitrogen purging to about room temperature, the semiconductor component thus coated is encapsulated with an epoxy resin molding material within approx. 48 hours.